TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION Effective December 1, 2003
DR-94

*The following product has been evaluated for compliance with the wind loads specified in the **International Residential Code (IRC)** and the **International Building Code (IBC)**. This product shall be subject to reevaluation 3 years after the effective date.*

This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.

This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code and the Texas Engineering Practice Act.

Aluminum Clad Wood Single and Double Outswing French Doors, Impact Resistant, manufactured by

Hurd Millwork Company, Inc.
575 S. Whelen Ave.
Medford, WI 54451
(800) 282-6019

will be acceptable in designated catastrophe areas along the Texas Gulf Coast when installed in accordance with the manufacturer's installation instructions and this product evaluation.

PRODUCT DESCRIPTION

The outswing doors evaluated in this report are impact resistant. This evaluation report also includes requirements for mullions.

System:

Frame Construction:

The outswing patio doors frame, head, and jambs are aluminum clad wood and the thresholds are constructed of aluminum and oak. The panels are constructed of wood and are clad in aluminum. The aluminum clad wood frames measured, **Assembly #1 & #3**, 144.875" wide x 95.5" high overall. **Assembly #2**: 71.5" wide x 137.75"high, **Assembly** #4&5: 71.5" wide x 95.5" high overall, and **Assembly 4A**: 36.312" wide X 95.5" high. The wooden portion of the main Ponderosa Pine frame as stated by the manufacturer, measures 4.563" thick x 1.493" deep. Wood members are butt corner constructed and secured with two (2) #8 x 3" SMS fasteners through head into side jambs and two (2) #8 x 2.5" panhead fasteners through sill into side jambs. The aluminum clad is cope and butted and joined with a nylon corner key (Hurd part # OCPD 546) at head and a half nylon corner key (Hurd part # OCPD 547) at sill secured with two (2) #6 x 0.625" Phillips flat head SMS fasteners per corner.

The fixed casement frame head, jambs, and sill are aluminum clad wood. The sash is constructed using wood and a fiberglass exterior cladding.

The fixed direct set frame head, jambs, and sill are aluminum clad wood.

Panel Construction:
Wood members are lapped together and joined with fully glued wood dowels measuring 0.750" diameter x 3.5" long located two (2) in the head and three (3) in the sill. Each corner had two (2) 0.08" diameter T-nails going through into dowels. Top rail measures 4.469" x 1.688" (ponderosa/sugar pine). The bottom rail measures 7.438" x 1.644" (ponderosa/sugar pine).The hinge and stationary stile measures 4.469" x 1.688" 1.3E Timberstrand LSL by Trussjoint Mac Millian. The lock stile measures 4.469" x 1.688" (LVL by Pacific Wood Laminates, Inc.). Each hinge stile has four (4) hinges secured to the frame jamb with two (2) #12 x 2.500" SMS and two (2) #12 x 0.750" SMS and to the leaf with two (2) #12 x 2.500" SMS and two (2) #12 x 0.750" SMS. The astragal cap is secured with #6 x 3" SMS fasteners located 4" from each end 8" on center thereafter.

Glazing:
Assembly: # 1, 3, 4, 4A, and 5: $\frac{3}{8}$" Cardinal Seastorm type "B" 4 mm annealed/0.015" PVB/0.007" PET/0.075 PVB/4 mm annealed.
Specimen: #2: $\frac{9}{16}$"Cardinal Seastrom type "B" 5mm annealed/0.015" PVB/0.007" PET/0.075 PVB/5mm annealed.

Glazing Method:
Three (3) sides are glazed with Schnee Moorhead SM-5431 or Dow Corning silicone with 0.563 inch bite on glass and captured with a wood glazing stop 0.685" x 0.842" and Neoprene shim pieces measuring 0.250" x .0.125" x 0.250" located both sides of glass 4" from each corner 18" on center thereafter. Glazing stop secured with one (1) row of 14 gage x 1.250" T-nails located 1" from each end 6" on center thereafter.

Hardware and Location:

Assembly	Qty.	Description	Location
1, 2, 3, 4, & 5	4	4" x 4" Hager 1191 Brass Hinges –located 9", 34.8", 60.6", and 86.4" measuring from top of panel.	All frame members
	1	Mortise lock 5-point locking system (Hardware Technologies Ltd.)	Active door leaf
	1	2-point shoot bolt assembly (Hardware Technologies Ltd.)	Inactive door leaf
	1	Handle	

Reinforcement:

Quantity	Description	Location
1	$\frac{1}{4}$" x 5.0" 6061-T6 aluminum bar	At each mullion
1	1.0" x 10.250" x 0.188" stainless steel bar corner reinforcement	Each corner of panel
1	1.867" x 4.125" x 0.090" stainless steel sill strike reinforcement (double doors)	Frame sill
1	1.867" x 2.063" x 0.090" stainless steel sill strike reinforcement (single doors)	Frame sill
1	Head strike stainless steel 1.3" x 6" x 0.125" (double doors)	Frame head
1	Head strike stainless steel 1.3" x 2.673" x 0.125" (single doors)	Frame head
1	Head plate 16 gauge galvanized steel 4" x 9" x 0.056"	Frame head
2	Astragal plate aluminum 1.32" x 3.78" x 0.093"	Frame top & bottom

Additional Description:

Assembly #1&3: Units mulled together with a ¼" x 5" aluminum reinforcement bar and secured with #¼" x 2.5" tapcon fastener located 4" from each end 12" on center thereafter each side.

Assembly #2: Units mulled together with an ¼" x 5" aluminum reinforcement bar and secured with ¼" 2.5" Tapcon fastener located 4" from each end 16" on center thereafter each side.

Product Identification:

Note: The frame construction, panel construction, glazing material, and glazing method are the same for each configuration.

LIMITATIONS

Configurations:

Design Pressures:

Type	Assembly Number	Maximum Width (in.)	Maximum Height (in.)	Design Pressures (psf)
Mulled Double and Single Door with Fixed Lite	1,3	144.88	95.50	+70; -70
Double Door with Mulled Top Lite	2	71.50	137.75	+70; -70
Double Doors	4, 5	71.50	95.50	+70; -70
Single Fixed Panel	4A	36.31	95.50	+70; -70

Impact Resistance: These door assemblies satisfy the Texas Department of Insurance's criteria for protection from windborne debris. These door assemblies will not need to be protected with an impact protective system.

Acceptance of Smaller Assemblies: Windows assemblies with dimensions equal to or smaller than those specified above are acceptable within the limitations specified in this report.

INSTALLATION INSTRUCTIONS

General: The outswing patio door(s) assembly shall be installed in accordance with the manufacturer's installation instructions and reference drawing number 1046, sheets 1 through 9, titled "Aluminum Clad Wood Impact French Doors," prepared by W.W. Schaefer Engineering & Consulting, P.A., dated April 3, 2001.

For wood frame construction, the outswing patio door (s) shall be fastened to minimum SYP lumber. The outswing patio door(s) may also be installed to concrete and concrete block walls.

The outswing patio doors shall be anchored to the wall opening as specified in drawing number 1046, sheets 1 through 9, titled "Aluminum Clad Wood Impact French Doors," prepared by W.W. Schaefer Engineering & Consulting, P.A., dated April 3, 2001.

MULLED DOUBLE AND SINGLE DOORS WITH FIXED LITE:

Door frames are secured to Southern Yellow Pine wood framing members.
Fixed Panel and Single Door Head Jambs: Secured with three (3) #10 x 3" Phillips F.H. SMS 4" from the corner and mid-span of each panel.
Double Door Head Jamb: Secured with five (5) #10 x 3" Phillips F.H. SMS 4" from the corners and equally spaced across the head. In addition there was a #10 x 3" SMS placed on each side of mullion 7" off the centerline and three (3) #10 x 2.5" through the head strike plate into the buck.
Side Jambs: Eight (8) #10 x 3" Phillips F.H. SMS 4" from the corners and equally spaced (approximately 12.5" O.C.).
***Fixed Panel and Single Door Sills*:** Secured with three (3) #10 x 3" Phillips F.H. SMS 4" from the corners and mid-span of each panels.
***Double Door Sill*:** Secured with six (6) #10 x 3" Phillips F.H. SMS 4" from corners at each panel mid-span and 4" off each side of the door center. In addition, there was a #10 x 3" SMS placed on each side of each mullion 7" off the centerline and three (3) #10 x 2.5" through the sill strike plate into the buck.

DOUBLE DOOR WITH MULLED TOP LITE:

Door Frames are secured to Southern Yellow Pine framing members with hurricane clips. Each clip is 1.5" x 6.438" x 0.058" thick galvanized steel secured to the jamb with one (1) #8 x 0.750" and one (1) #8 x 0.625" P.H. SMS screws and wrapped at both sides of the wood framing member and screwed to the wood framing member with one (1) #10 x 1.25" P.H.SMS screw each side.
***Transom Head Jamb*:** Six (6) clips 4" from corners and equally spaced (approximately 12.8" o.c.).
Transom Side Jamb: Four (4) clips from corners and equally spaced (approximately 12." o.c.). Note: One (1) Clip, with a #10 x 3" SMS screw, shall be provided at the mullion corner at right side of unit.
Door Side Jambs: Eight (8) clips 4" from corners and equally spaced (approximately 12.5" o.c.). In addition, at the door side jamb, two (2) #12 x 2.5" S.S. SMS were used at each hinge through the hinge and jamb into wood framing member. Note (1) clip was replaced with a #10 x 3" SMS screw at the mullion corner right side of the unit.
Door Sill: Secured with six (6) #10 x 3" Phillips F.H. SMS 4" from the corners, at each panel mid span and 4" off each side of the door center. In addition, there were three (3) #10 x 2.5" through the sill strike plate into the wood framing member.
Additional Fasteners at Mullion Ends: Additional clip placed at the left side of the unit 7" off mullion centerline each side of mullion. Additional #10 x 3" SMS placed at the right side of the unit 7" off mullion centerline each side of mullion.

DOUBLE DOORS

Door frames are secured Southern Yellow Pine wood framing member
Double Door Head Jamb: Secured with five (5) #10 x 3" Phillips F.H. SMS 4" from the corners and equally spaced across the head. In addition, there were (3) #10 x 2.5" through the head strike plate into the wood framing member.
Side Jambs: Eight (8) #10 x 3" Phillips F.H. SMS 4" from the corners and equally spaced (approximately 12.5" O.C.).

Double Door Sill: Secured with six (6) #10 x 3" Phillips F.H. SMS 4" from the corners, at each panel mid-span and 4 " off each side of the door center. In addition, there were three (3) #10 x 2.5" through the sill strike plate into the wood framing member.

SINGLE FIXED DOOR

Door frame was secured Southern Yellow Pine wood framing member with hurricane clips. Each clip is 1.5" x 6.438" x 0.058" thick galvanized steel secured to the jamb with one (1) #8 x 0.750" and one (1) #8 x 0.625" P.H. SMS screws and wrapped at both sides of the wood framing and screwed to the wood framing member with one (1) #10 x 1.25" P.H. SMS screw each side.

Fixed Panel Head Jamb and Sill: Secured with three (3) clips 4" from the corners and mid-span of each panel.

Side Jambs: Eight (8) clips 4" from the corners and equally spaced (approximately 12.5" O.C.).

Note: The manufacturer's installation instructions and Drawing No. 1046 as prepared by W.W. Schaefer Engineering & Consulting, P.A., dated April 3, 2001, shall be available on the job site during installation. All fasteners shall be corrosion resistant as specified in the International Residential Code (IRC) and the International Building Code (IBC).